

VINCENT COMBES

French, born June 30th 1982

Ph.D. Georgia Institute of Technology (USA) - Engineer ENSEEIHT (Fr.) - Ocean Modeler -

Adresses	Contact information	Languages
✓ USA: xxxxx CORVALLIS, OR 97333	✓ USA phone: +1 770 xxx xxx ✓ Email: Vincent.combes@gmail.com	✓ French (mother tongue)
✓ France: xxxxx 06250 MOUGINS, FRANCE	✓ Webpage: www.vincentcombes.com ✓ Work Skype: vincent_combes	✓ English (fluent) ✓ Spanish (fluent) ✓ German (basic notions)

FORMATION

- 06/2014 – Present **OREGON STATE UNIVERSITY** – College of Ocean and Atmospheric Sciences – Corvallis, OR USA,
Research Associate – *Physical Oceanography / Ocean Modeling*
- 08/2010 – 06/2015 **OREGON STATE UNIVERSITY** – College of Ocean and Atmospheric Sciences – Corvallis, OR USA,
Post-Doctorate – *Physical Oceanography / Ocean Modeling*
- 08/2004 – 08/2010 **GEORGIA INSTITUTE OF TECHNOLOGY** – Earth & Atmospheric Sciences - Atlanta, GA USA,
Ph.D. Degree – *Physical Oceanography*
- 01/2009 – 12/2009 **UNIVERSIDAD DE CONCEPCION** – Concepción, CHILE
Research Collaborations
- 08/2004 – 08/2007 **GEORGIA INSTITUTE OF TECHNOLOGY** – Earth & Atmospheric Sciences - Atlanta, GA USA,
Master Degree – *Atmospheric and Ocean Dynamics*
- 08/2002 – 06/2005 **ENSEEIHT** – Ecole National Supérieure d'Electrotechnologie, d'Electronique, d'Informatique, d'Hydraulique et
des Télécommunications - Toulouse, FRANCE
Engineering Degree (Master) – *Specialized in Fluid Mechanics and Hydraulics*

PROFESSIONAL EXPERIENCES (USA - Chile - Argentina - Colombia)

- 08/2004 – Present **RESEARCH EXPERIENCE IN PHYSICAL OCEANOGRAPHY - OCEAN MODELING**
Specialized in the use of the Regional Ocean Modeling System (ROMS)
- Post Doctorate Advisors: Dr. Ricardo Matano and Dr. Ted Strub, Corvallis USA
PhD Advisor: Dr. Emanuele Di Lorenzo, Atlanta USA
Main Chilean Collaborators: Dr. Samuel Hormazabal, Dr. Carolina Parada
Main Argentinean Collaborators: Dr. Elbio Palma, Dr. Alberto Piola
Main US collaborators: Dr. Yvette Spitz, Dr. Dudley Chelton
- Research Interests:*
- Low frequency ocean variability (surface and subsurface currents)
 - Coastal upwelling variability
 - Eddy dynamics

- Cross-shelf transport
- Physical-biological Interaction (NEMURO_Fe model)
- Air-sea interaction
- Satellite observations: Altimetry (AVISO), Sea surface salinity (Aquarius)

Studied and Modeled Regions:

- North Pacific: Gulf of Alaska, Oregon shelf, California Current System
- South Pacific: Peru-Chile Current system, Juan Fernandez Islands
- South Atlantic: Patagonian shelf, Brazil Current, Malvinas Current, South Georgia Island, Antarctic Circumpolar Current, Meridional Overturning Circulation, Agulhas Current and Benguela Current

TEACHING EXPERIENCES

Medellin, COL.

2 weeks class (2012): “The ROMS Ocean Model applied to the Colombian coast”, **taught in Spanish**

Buenos Aires, ARG.

2 weeks class (2011): “Ocean Circulation, Theory and Models”, **taught in Spanish**

Atlanta, USA.

5 years Teaching Assistant (2004-2008): “Introduction to oceanography” (several lectures + grading)

PUBLICATIONS

Published book chapters

[1] Contributor to chapter 14 of: “Ocean Circulation and Climate – A 21st Century Perspective”, Edited by G. Siedler, S.M. Griffies, J. Gould and J.A. Church. Published December 2013.

Submitted/In preparation

[34] Dhage Laxmikant, T. Durland, T. Strub, **V. Combes**, J.P. McCreary (in prep): Vertical Kelvin Wave Propagation Produced by a Subsurface Ridge

[33] Garcia Alonso, V.A., B.C. Franco, **V. Combes**, M. Pajaro and F.L. Capitanio (in prep): Of patterns and transport down south: Patagonian sprat (*Sprattus fuegensis*) early life stages in the Southwest Atlantic

[32] Pereda-Briones L., F. Tuya, L. Royo, **V. Combes**, E. Ballesteros, S. Clemente, G. Ederly, S. Farina, V. Gerovasileiou, L. Ivesa, M. Sini, Y. Torquemada, G. Procaccini, J. Terrados, L. Marín-Guirao and F. Tomas (submitted): Resilience of seagrass seedlings to marine heatwaves is modulated by local thermal variation

[31] Chen, G., **V. Combes**, D.B. Chelton, R.P. Matano and X. Chu (submitted): Regulation of the Agulhas Current through feedback between mesoscale eddies and surface winds

[30] **Combes, V.**, R.P. Matano, and E.P. Palma (submitted to JGR): Circulation and Cross-Shelf Exchanges in the Northern Shelf Region of the Southwestern Atlantic: Dynamics

[29] **Combes, V.**, R.P. Matano, and E.P. Palma (submitted to JGR): Circulation and Cross-Shelf Exchanges in the Northern Shelf Region of the Southwestern Atlantic: Kinematics

Published articles

[28] Hernán G., M.J. Ortega, J. Henderson, J. Alós, K. Boyer, S. Cimon, V. Combes, M. Cusson, C.M. Hereu, M. Hessing-Lewis, K. Hovel, P. Jorgensen, S. Kiriakopolos, N. Kollars, M.I. Ó Connor, J. Olsen, P.L. Reynolds, J. Ruesink, E. Voigt, F. Tomas (2020): Latitudinal variation in plant defence against herbivory in a marine foundation species does not follow a linear pattern: The importance of resource availability. *Global Ecol Biogeogr.* doi:<https://doi.org/10.1111/geb.13217>

[27] Meerhoff E., O. Defeo, V. Combes, B.C. Franco, R.P. Matano, A.R. Piola, F. Hernández Vaca, E. Celentano (2020): Assessment of larval connectivity in a sandy beach mole crab through a coupled bio-oceanographic model. *Estuarine, Coastal and Shelf Science*, 246, 107035. doi:<https://doi.org/10.1016/j.ecss.2020.107035>

[26] Franco B.C., V. Combes and V. González Carman (2020): Subsurface Ocean Warming Hotspots and Potential Impacts on Marine Species: The Southwest South Atlantic Ocean Case Study. *Front. Mar. Sci.* 7:563394. doi:<https://doi.org/10.3389/fmars.2020.563394>

[25] Matano, R.P., **V. Combes**, E.F. Young and M. Meredith (2020): Modeling the Impact of Ocean Circulation on Chlorophyll Blooms Around South Georgia, Southern Ocean. *Journal of Geophysical Research: Oceans*, doi:<https://doi.org/10.1029/2020JC016391>

- [24] Palma, E., R.P. Matano, M. Tonini, P. Martos and **V. Combes** (2020): Dynamical Analysis of the Oceanic Circulation in the Gulf of San Jorge, Argentina. *Journal of Marine Systems*, doi:<https://doi.org/10.1016/j.jmarsys.2019.103261>
- [23] **Combes, V.** and R.P. Matano (2019): On the origins of the low-frequency sea surface height variability of the Patagonia shelf region. *Ocean Modelling*, 142, doi:<https://doi.org/10.1016/j.ocemod.2019.101454>.
- [22] Matano, R.P., E. Palma and **V. Combes** (2019): The Burdwood Bank Circulation. *Journal of Geophysical Research: Oceans*. <https://doi.org/10.1029/2019JC015001>
- [21] **Combes, V.** and R.P. Matano (2018): The Patagonian shelf circulation: Drivers and variability. *Progress in Oceanography*, 167, 24-43, doi:<https://doi.org/10.1016/j.pocean.2018.07.003>.
- [20] Franco, B.C., E.D. Palma, **V. Combes**, E.M. Acha and M. Saraceno (2018): On the offshore export of subantarctic shelf waters from the Patagonian shelf: summer and winter conditions. *JGR Oceans*
- [19] Chenillat, F., P.J.S. Franks, X. Capet, P. Rivière, N. Grima, B. Blanke and **V. Combes** (2018): Eddy properties in the Southern California Current System. *Ocean Dynamics*, doi:<https://doi.org/10.1007/s1023>
- [18] Parada, C., A. Gretchina, S. Vásquez, A. Belmadani, **V. Combes**, B. Ernst, E. Di Lorenzo, J. Porobic, A. Sepúlveda (2017): Expanding the conceptual framework of the spatial population structure and life history of jack mackerel in the eastern South Pacific: an oceanic seamount region as potential spawning/nursery habitat. *ICES Journal of Marine Science*, doi:[10.1093/icesjms/fsx065](https://doi.org/10.1093/icesjms/fsx065)
- [17] Franco, B.C., E.D. Palma, **V. Combes**, M.L. Lasta (2017): Physical processes controlling passive larval transport at the Patagonian Shelf Break Front. *Journal of Sea Research*, 124, 17-25
- [16] Chenillat, F., P.J.S. Franks, **V. Combes** (2016): Biogeochemical Properties of Eddies in the California Current System. *Geophys. Res. Letters*, doi:[10.1002/2016GL068945](https://doi.org/10.1002/2016GL068945).
- [15] Strub, P. T., C. James, **V. Combes**, R. P. Matano, A. R. Piola, E. D. Palma, M. Saraceno, R. A. Guerrero, H. Fenco, and L. A. R. Etcheverry (2015), Altimeter-derived seasonal circulation on the southwest Atlantic shelf: 278–438S, *J. Geophys. Res. Oceans*, 120.
- [14] **Combes, V.**, S. Hormazabal, and E. Di Lorenzo (2015), Interannual variability of the subsurface eddy field in the Southeast Pacific, *J. Geophys. Res. Oceans*, 120.
- [13] Guerrero, R. A., A. R. Piola, H. Fenco, R. P. Matano, **V. Combes**, Y. Chao, C. James, E. D. Palma, M. Saraceno, P. Ted Strub (2014): The salinity signature of the cross-shelf exchanges in the Southwestern Atlantic Ocean: Satellite observations, *Journal of Geophysical Research: Oceans*, 119.
- [12] Matano, R. P., **V. Combes**, A. R. Piola, R. Guerrero, E. D. Palma, P. Ted Strub, C. James, H. Fenco, Y. Chao, M. Saraceno (2014): The salinity signature of the cross-shelf exchanges in the Southwestern Atlantic Ocean: Numerical simulations. *Journal of Geophysical Research: Oceans*, 119.
- [11] **Combes, V.** and R.P. Matano (2014): Trends in the Brazil/Malvinas Confluence region. *Geophysical Research Letters*, 41.
- [10] **Combes, V.** and R.P. Matano (2014): A two-way nested simulation of the oceanic circulation in the Southwestern Atlantic. *Journal of Geophysical Research: Oceans*. 119.
- [9] Andrade, I., S. Hormazabal, **V. Combes** (2014): Intrathermocline eddies at the Juan Fernández Archipelago, southeastern Pacific Ocean. *Lat. Am. J. Aquat. Res.*, 42(4): 888-906.
- [8] Di Lorenzo, E., **V. Combes**, J.E. Keister, T.P. Strub, A.C. Thomas, P.J.S. Franks, M.D. Ohman, J. Furtado, A. Bracco, S.J. Bograd, W.T. Peterson, F.B. Schwing, S. Chiba, B. Taguchi, S. Hormazabal, C. Parada (2013): Synthesis of Pacific Ocean climate and ecosystem dynamics. *Oceanography*, 26(4), 68-81.
- [7] Hormazabal, S., **V. Combes**, C.E. Morales, M.A. Correa-Ramirez, E. Di Lorenzo, S. Nuñez (2013): Intrathermocline eddies in the Coastal Transition Zone off central Chile (31-41°S). *Journal of Geophysical Research: Oceans*, 118, 1–11.
- [6] **Combes, V.**, F. Chenillat, E. Di Lorenzo, P. Rivière, M. D. Ohman and S. J. Bograd, (2013): Cross-shore transport variability in the California Current: Ekman upwelling vs. eddy dynamics. *Progress in Oceanography*, 109, 78-89.
- [5] Porobić, J., C. Parada, B. Ernst, S. Hormazabal, **V. Combes** (2012): Modeling the connectivity of Juan Fernández rock lobster (*Jasus frontalis*), subpopulations through a biophysical model. *Lat. Am. J. Aquat. Res.*, 40(3), 613-632.
- [4] Keister, J.E., E. Di Lorenzo, C. Morgan, **V. Combes**, W. Peterson, (2011): Zooplankton species composition is linked to ocean transport in the Northern California Current. *Global Change Biology*, 17.
- [3] **Combes, V.**, E. Di Lorenzo and Curchitser, E, (2009): Interannual and Decadal Variations in Cross-Shelf Transport in the Gulf of Alaska. *Journal of Physical Oceanography* 39(4), 1050-1059.
- [2] Capotondi, A., **Combes, V.**, Alexander, M. A., Di Lorenzo, E. and Miller, A. J., (2009): Low-frequency variability in the Gulf of Alaska

from coarse and eddy-permitting ocean models. *Journal of Geophysical Research: Oceans*, 114

[1] **Combes, V.**, E. Di Lorenzo, (2007): Intrinsic and forced interannual variability of the Gulf of Alaska mesoscale circulation. *Progress In Oceanography*, 75, 266-286

CONFERENCES & WORKSHOPS

Feb 2020 - Ocean Sciences Meeting, San Diego. Oral presentation

“Projected Change of the Southwest Atlantic Circulation”

Feb 2020 - Ocean Sciences Meeting, San Diego. Poster

“The Burdwood Bank circulation”

Oct 2019 - Ocean Surface Topography Science Team Meeting (OSTST), Chicago. Poster

“Variability of the Agulhas Bank circulation”

Oct 2019 - University of South Carolina. Oral Presentation

“Variability of the Southwest Atlantic circulation”

May 2019 - COAPS, Florida State University, Tallahassee. Oral presentation

“Variability of the Patagonian shelf circulation”

Feb 2018 - Ocean Sciences Meeting, Portland. Oral presentation

“Low Frequency Variability of the Patagonian Shelf Sea Surface Height Variability: Local vs Remote Forcing”

Dec 2016 - IMEDEA, Palma, Spain. Oral Presentation in Spanish

“Interannual variability of the Patagonian shelf circulation”

Feb 2016 - Ocean Sciences Meeting, New Orleans. Poster

“Interannual Variability of the Patagonian shelf circulation and cross-shelf exchange”

May 2015 - 7th International Workshop on Modeling the Ocean, Canberra, Australia. Oral Presentation.

“Interannual Variability of the Patagonian Shelf Circulation”

Dec 2014 - Workshop on South Atlantic circulation variability and change: integrating models and observations, Buenos Aires, Argentina.

Oral Presentation. “Trends in the Brazil/Malvinas Confluence region”

Feb 2014 - Ocean Science Meeting, Honolulu. Poster.

“A Two-Way Nested Simulation Of The Oceanic Circulation In The Southwestern Atlantic”

Nov 2013 - Universidad Catolica de Valparaiso, Valparaiso, Chile. Oral Presentation in Spanish.

“Interannual Variability of the Subsurface Eddy Field in the SouthEast Pacific”

Oct 2013 - 3rd Congreso de Meteorología, Oceanografía y Clima del Pacifico Sur Oriental, Santiago, Chile. Oral Presentation in Spanish.

“Intrathermocline Eddies in the Coastal Transition Zone off central Chile (31°S-41°S)”

Dec 2012 - American Geophysical Union, San Francisco. Poster.

“Modeling the Patagonian ShelfBreak Upwelling”

Apr 2012 - Invited at the Universidad Nacional de Medellin, Colombia. Oral Presentation in Spanish.

“The ROMS 2 ways nesting capability applied in real cases ocean circulation”

Feb 2012 - Ocean Science Meeting, Salt Lake City. Poster.

“Mean and seasonal transport variability in the Southwest Atlantic”

Dec 2011 - Invited at the Universidad de Buenos Aires, Argentina. Oral Presentation in Spanish.

“Mean and Seasonal Transport Variability in the Southwest Atlantic, derived from a two-way nesting Experiment”

Oct 2010 - Altimetry for oceans and hydrology and 4th Coastal Altimetry Workshop - Lisbon and Porto, Portugal. Poster.

“Upwelling and cross-shelf transport dynamics along the Pacific Eastern boundary”

Oct 2010 - Physical Oceanography Dissertations Symposium - PODS VI, Hawaii. Oral Presentation.

“Upwelling and cross-shelf transport dynamics along the Pacific Eastern boundary”

Nov 2009 - Taller de analisis del estado del conocimiento y perspectivas de investigación del sistema de la surgencia costera de la Guajira, Cartagena Colombia. Oral Presentation in Spanish. "Variabilidad del sistema de surgencia de La Guajira, estimado por un trazador pasivo"

Oct 2009 - PICES Annual Meeting, Jeju, South Korea. Oral Presentation.

"Interannual and Decadal Variations in Cross-Shelf Transport in the Gulf of Alaska"

Sep 2009 - Primer Congreso de Oceanografía Física Meteorología y Clima: Concepcion Chile. Oral Presentation in Spanish.

"Variabilidad interanual y decadal de surgencia en el Sistema de Corriente de Humboldt, estimado por un trazador pasivo"

Nov 2006 - ROMS workshop, Madrid. Oral Presentation.

"Forced and Intrinsic Interannual Variability in the surface ocean circulation of the Gulf of Alaska"

Oct 2006 - Conference EPOC, Oregon. Poster.

"Forced and Intrinsic Interannual Variability in the Gulf of Alaska"

Feb 2006 - Ocean Sciences Meeting, Hawaii. Poster.

"Role of Eddies in the Upper Ocean"

AMS (American Meteorological Society): San Diego (2005), Atlanta (2006)

AWARDS

Research Excellence Award for the School of Earth and Atmospheric, Georgia Institute of Technology, year 2009

Best Poster Award for the 2008 Graduate Students Symposium for the School of Earth and Atmospheric, Georgia Institute of Technology

Best Poster Award for the College of Sciences for the Georgia Institute of Technology, Graduate Students Symposium year 2008

OTHERS/SKILLS

Climate Dynamics, Fisheries Oceanography, Geophysical Research Letters, Journal of Geophysical Research, Journal of Marine Research, Latin America Journal of Aquatic Research, Ocean Modelling, Ocean Dynamics...

Informatics skills: Matlab, Fortran, Unix, Adobe illustrator, Adobe Photoshop, Corel Draw, Office, use of super computers

Spare time: Skiing, Rock climbing, Volleyball, Tennis, Salsa dancing and Traveling

Languages: Fluent in French, English and Spanish

Personal webpage: www.vincentcombes.com

REFERENCES

Ricardo Matano	CEOAS, Oregonstate University, USA	rmatano@coas.oregonstate.edu
Ted Strub	CEOAS, Oregonstate University, USA	strub@coas.oregonstate.edu
Emanuele Di Lorenzo	EAS, Georgia Institute of Technology, USA	edl@eas.gatech.edu
Samuel Hormazabal	Pont. Univ. Católica de Valparaíso, CHILE	sam.hormazabal@gmail.com
Yuley Cardona	Univ. Nacional de Colombia, COLOMBIA	ymcardon@unal.edu.co